

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. *(Previously Presented)* A device for compressing a list of final destination addresses for a multicast message, wherein each final destination address in said list represents a different final destination host, said device comprising:

a detector that detects a common prefix in at least two different final destination addresses from said list of final destination addresses,

a generator that generates a suffix list for final destination addresses from said list of final destination addresses that are detected to have a common prefix, wherein said suffix list represents the non-identical portions of said final destination addresses detected to have a common prefix, and

an adder that adds said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses.

2. *(Previously Presented)* The device for compressing according to claim 1, wherein said list of destination addresses comprises Internet Protocol addresses.

3. *(Previously Presented)* The device for compressing according to claim 1, wherein said list of destination addresses comprises Internet Protocol addresses and other compound destination addresses.

4. *(Previously Presented)* The device for compressing according to claim 1, wherein said list of destination addresses comprises previously compressed compound destination addresses.

5. *(Previously Presented)* The device for compressing according to claim 1, wherein said device is incorporated in a host of a communications network having connectionless multicast transmission capabilities.

6. *(Previously Presented)* The device for compressing according to claim 1, wherein said device is incorporated in a router of a communications network having connectionless multicast forwarding capabilities.

7. *(Previously Presented)* A method for compressing a list of final destination addresses for a multicast message, wherein each final destination address in said list represents a different final destination host, said method comprises:

detecting a common prefix in at least two different final destination addresses  
from said list of final destination addresses,

generating a suffix list for final destination addresses from said list of final  
destination addresses that are detected to have a common prefix, wherein said suffix list  
represents the non-identical portions of said final destination addresses detected to have a  
common prefix, and

adding said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses.

8. *(Cancelled)*.

9. *(Previously Presented)* A router according to claim 6, wherein said router further comprises:

a routing table memory, and

an addressing device to address said routing table memory via a compound address having the same format as said compound destination address.

10. *(Cancelled)*.

11. *(Previously Presented)* The device for compressing according to claim 1, wherein said detector detects octet-aligned prefixes.

12. *(Previously Presented)* The device for compressing according to claim 1, wherein said detector detects nibble-aligned prefixes.

13. *(Previously Presented)* The device for compressing according to claim 1, wherein said detector detects bit-aligned prefixes.

14. *(Previously Presented)* The method for compressing according to claim 7, wherein detecting a common prefix further comprises detecting octet-aligned prefixes.

15. *(Previously Presented)* The method for compressing according to claim 7, wherein detecting a common prefix further comprises detecting nibble-aligned prefixes.

16. *(Previously Presented)* The method for compressing according to claim 7, wherein detecting a common prefix further comprises detecting bit-aligned prefixes.

17. *(Previously Presented)* The device for compressing according to claim 1, wherein said detector, said generator and said adder iteratively compress said list of final destination addresses.

18. *(Previously Presented)* The method for compressing according to claim 7, wherein the detection of a common prefix, the generation of a suffix list and the adding of the suffix list to the common prefix is iteratively performed for said list of final destination addresses.

19. *(Currently Amended)* A communications network comprising:

a host that generates multicast packets, wherein said host ~~comprises~~includes a device for compressing a list of final destination addresses ~~according to claim 1 for a multicast packet, wherein each final destination address in said list represents a different final destination host, said device comprising:~~

a detector that detects a common prefix in at least two different final destination addresses from said list of final destination addresses,

a generator that generates a suffix list for final destination addresses from said list of final destination addresses that are detected to have a common prefix, wherein said suffix list represents the non-identical portions of said final destination addresses detected to have a common prefix, and

an adder that adds said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses; and

a router connected to said host, wherein said router receives a compound destination address created by said host and derives the common prefixes from said compound destination address to determine the next hop for ~~each common prefix~~ multicast packet.

20. (*Currently Amended*) The communications network according to claim 19, wherein said router comprises a compression device for compressing a list of derived common prefixes and their respective suffixes, said compression device in said router comprising:

a generator that generates a suffix list that represents non-identical portions for each of said common prefixes derived from said received compound destination address, and

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an adder that adds said respective suffix list to each of said derived common  
prefixes to create a new compound destination address consisting of compressed final  
destination addresses.